IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

	James Patrick Griffin et al.	:	Examiner:	G. Strimbu
Serial No.:	10/619,154	:	Art Unit:	3634
Filed:	July 14, 2003	:	Confirmation No.:	6780
For:	SECURITY DEVICE FOR A DOOR			

DECLARATION

I, James P. Griffin, Jr., hereby declare and say:

1. I am one of the inventors of the invention set forth in the above application.

2. I am familiar with the prosecution history of said application, including an Office Action dated September 6, 2006 and Smith, UK Patent Application No. 2,265,664 and Barnes, U.S. Patent No. 306,806.

3. In the September 6, 2006 Office Action, claims in the above application, especially Claims 30-35 and 40-45, have been rejected as being unpatentable over the combination of the Smith patent application and the Barnes patent. The Examiner has combined these two references to support his position that our invention is obvious. In particular, he has indicated it would be obvious to combine the longitudinally extending metal piece in the Barnes patent that is applied to the edge of a door with the security system described in the Smith patent application.

4. I am a principal in a company in Toronto known as Safedoor Systems Inc., and I have been familiar with security systems for doors for over 18 years. I am especially familiar with door security systems similar to the one described in the Smith patent application. I know that such systems readily fail upon assault.

5. I also know from experience that when a flat piece such as the longitudinally extending piece disclosed by Barnes is applied to the edge of a door to prevent wrapping, the screws inserted along a longitudinally extending line in the middle of the edge of the door create a line of weakness where the door will fail upon assault.

6. A door security system corresponding to the claims herein, particularly Claims 30 and 40, is sold under the name DOOR SAFE SYSTEMS™ in Canada and the name SAFE DOOR SYSTEMS™ in the United States. This door security system, pictures of which, in and out of the packaging, are attached, has been on sale in Canada and in the United States for approximately fifteen months. Sales of the door security system have steadily increased to the point that we are selling about 10,000 units per month. This has been accomplished with only minimal advertising. We have projected sales of at least 200,000 units during 2007 due to additional markets and more advertising.

7. Because we felt that we should not invest much money in advertising for the DOOR SAFE SYSTEMS/SAFE DOOR SYSTEMS door security system until we had patent protection, most of the interest in the DOOR SAFE SYSTEMS/SAFE DOOR SYSTEMS door security system has been generated by word of mouth. In addition, when there were a rash of burglaries in the Toronto area about four months ago, a report from a local television station featured the DOOR SAFE SYSTEMS/SAFE DOOR SYSTEMS door security system as a solution. That report generated tremendous interest in our product, resulting in a spike in sales and then a continued increase in monthly sales.

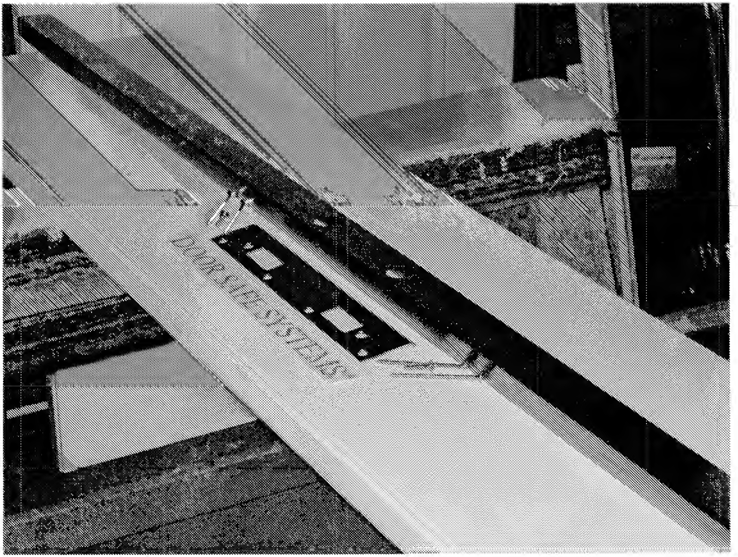
8. In addition to increasing interest from consumers, there are two major distributors of hardware and tool products in the United States that each want to add the DOOR SAFE SYSTEMS/SAFE DOOR SYSTEMS door security system to their line. In fact, representatives from one of those distributors were so impressed with the potential of the DOOR SAFE SYSTEMS/SAFE DOOR SYSTEMS door security system that they specifically expressed interest in a "package deal" whereby they would purchase all rights to the product. However, we have declined to enter into any such arrangements until the patent situation was clarified.

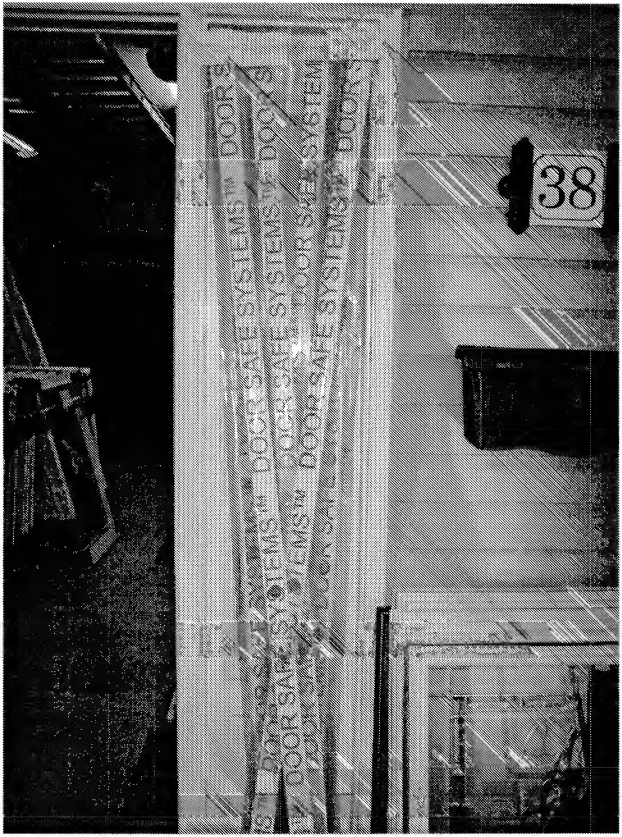
9. The DOOR SAFE SYSTEMS/SAFE DOOR SYSTEMS door security system is an important product to our company, and we view it as a commercial success thus far based upon the amount of sales compared to very limited advertising on our part and upon the amount of interest from others in the industry.

I hereby declare that all statements made herein of my own knowledge are true, that all statements mode on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both under 18 U.S.C. §1001 and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

December 11, 2006

James P. Griffin, Jr.

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DOOR SAFE SYSTEMS™

Larson Tool & Stamping Company

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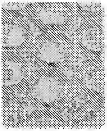
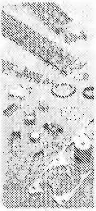


Capabilities range from simple one-step stampings to complex multi-step processes.

How to Specify and Design
by Neil Fonger

Metal Stamping Design Guidelines
Metal Stamping is an economical way of producing quantities of parts that can have many qualities including strength, durability; wear resistance, good conductive properties and stability. We would like to share some ideas that could help you design a part that optimizes all the features that the metal stamping process offers.



A selection of parts and p complete in one operation progressive stamp

Material Selection
There are many sheet and strip materials to choose from that respond well to metal stamping and forming. However, price and availability can vary greatly and affect the cost and delivery of production metal stampings. There are factors that should be considered when selecting an alloy and specifying physical characteristics of that material.

Tolerancing
Most common steel grades are offered in standard gage thicknesses and tolerance usually readily available as stock items and are generally the best choice when cos major factor. Rolling mills work from master coils, and so usually have minimum orc somewhere in the truckload range. If the material required to produce a metal stam less than this quantity, a steel warehouse can search its inventory to find material tl fall within the specified tolerance, but this makes availability a variable from order to Custom material can be purchased from companies that specialize in re-rolling sma the cost can increase exponentially.

Chemistry
Over-specifying an alloy is one of the biggest factors in driving up the cost of a met are many different alloys produced, in ferrous and non-ferrous materials alike, but e thickness tolerances, the less common alloys will be custom-produced by the mill a in large quantities only. It is possible to find someone who is supplying the same pr customer. Like with non-standard thicknesses, this would be hit or miss, and depen customers' requirements and delivery schedules.
The quality of steel products has increased greatly in the last 20 years or so. Contir a very consistent and homogenous alloy mix. From our experience, today's metals

and of a much more consistent quality. Savings can be had from taking advantage in stock warehoused alloys.

Blanking, Trimming, and Perforating

The Anatomy of a Hole

Normal metal stamping processes involve driving a sharpened tool steel punch thrc strip material and into a die cavity where the slug or scrap is ejected. Cutting cleara punch and die are closely defined and specified. And the process produces a very condition on the finished part. Basically, the punch starts out by trying to compress producing a rolled or radiused top edge. As the sharp punch begins to cut through, material, producing a straight, burnished wall, usually between 1/4 to 1/3 through. A beyond the strength of the material it yields, breaking away in a line between the pu and leaving a burr around the bottom edge.

Burrs

Burrs, like parting lines in plastics or flash on castings, are normal by-products of th process. Blanking burrs are usually somewhat ragged, uneven and sharp. They ca punch and die edges become dull, but generally, up to 10% of material thickness c Burrs can be dulled or removed by mass finishing processes or secondary operatio the application.

Hole Dimensioning and Tolerancing

Since punch and die clearances are normally around 8% to 10% of material thickne bottom portion of the hole or trim will be tapered the amount of die clearance. There dimensions are normally measured at the shear, or smallest portion, disregarding t Likewise, an outside dimension will be measured at the shear or largest portion, wi tapering smaller. If this breakaway cannot be tolerated in a particular application, a edge feature can be re-trimmed or "shaved" to produce a straight edge. This must I will require an additional step or secondary operation. Normal piercing and blanking extremely repeatable and very close tolerances can be expected. Size tolerances c in most applications.

Location

In most cases, holes pierced in a flat blank part can be done in the same operation hole to hole is repeatable within a close tolerance, usually +/-.002". The only excep are closely spaced (<1-1/2 X material thickness) and must be pierced in separate s operations. Gauging or feed accuracy will require more liberal tolerances. In the ca on different planes, as in a part with an offset form, the added variables of bend tol material spring-back must be considered and allowed for.

Tooling Considerations

The same compressive forces exerted on the material are shared by the tooling. A punch perforating .062 thick mild steel will require 2-1/2 tons of pressure behind it t 80 parts per minute this places extreme impact forces on the body of that punch. P catastrophically if there is not enough cross-section area to support this force. To a condition it is best to design perforations with a cross-section or diameter equal to r a minimum.

Bending and Forming

Most metal forming is a linear process. That is, the work of perforating, forming and by the up and down movement of press equipment. Amazingly complex shapes ca using this process, but a good metal stamping design will take the process and mal consideration.

As a general rule, the lower the alloy and temper, the more formable the material. T in terms of how tightly they will bend without cracking and whether with the grain or the harder a material is, the more it will "spring back" when formed and, from a met standpoint, how much extra work or over- bend must be induced to achieve the spe

Generally, anything up to 90 degrees can be done in one operation. Beyond that, a may be needed. Forming in this manner relies on a "leg" of material to be pushed c position while the base material is held flat. For that reason, the length of a formed least 2-1/2 times the material thickness beyond a bend radius.

Distortion
As metal is formed, it is displaced through the bend radius. The material on the insi compressed, while the material on the outside of the bend is stretched.
On thicker materials and bends with relatively small inside bend radii (2 X material ‹ be some overall thinning of material through the bend. In addition, because materia the inside of the bend, the excess gets forced out either end of the bend radius, cre bend bulges. If they are not acceptable, the blank must be contoured to compensat "Bulging not allowed in this area" should be added to the part drawing.
For the same reason, when two adjacent sides are folded up, as in forming a box, ‹ needed at the base of the bend to avoid "pinched" corners. Usually, this would be ir round hole placed at the convergence point of the sides.
When a leg is formed up alongside a flat section of the part, consideration should b transition from form to flat. The flat section should be trimmed back to the base of tl the edge of a flat section must be flush with a formed leg, bend reliefs should be cu either side of the leg.

Dimensioning forms
Formed features are subject to a number of variables, including material thickness tolerances, angular tolerances on bends, and station-to-station inaccuracies in the Dimensions should always be given to the inside of the formed feature. Angular tol degree or so should be allowed on bends of any angle. For this reason, tolerancing at the outer end of a form should take the angular tolerance of the bend and the dis bend into consideration. Where a feature has multiple bends, tolerance stack-up sh and allowed for. Where tolerances need to be tightly held, an additional qualifying c required to meet this specification.

Deep Draw

The process
Deep draw refers to the process of pulling a flat "blank" of material over a radiused cavity, producing a closed bottom, round or irregularly shaped cup or cylinder. It sh confused with stretch-forming. The blank is actually forced into a plastic state as it i die radius and down into the die. This process is done under calculated and very cc involving blank-holding pressures, punch and die radii, punch speed and lubricatior

Anatomy of a deep draw
The 2 stages of a draw are cupping and drawing. When the punch first contacts the the punch initially embosses the material into the die. Some stretching occurs at thi produces what is known as a "shock line". This is a pronounced area of thinning arc the bottom and just up into the straight wall of the shell. Depending on the shape of material may still be near original thickness across the bottom face (flat bottom) or stretching action (spherical bottom). As the blank is pulled into the die, the material circumference gathers and the wall progressively thickens. As the blank is pulled in diameter, the material thickens to as much as 10% over the original thickness. Clea provided for this thickening to occur so that the material will not get bound up betwe In addition, the punch must be tapered so that the finished shell can be stripped off drawn shell will taper from bottom to top. It is possible to minimize this through sub operations, but not eliminate it entirely.
The blank used to produce a shell is cut from rolled strip material with a grain struc across the blank in the direction of rolling. Since this cross-grain does not pull into a evenly from all directions, great stresses are induced in the shell wall. Due to these drawn shell will not be perfectly round. A flange added to the top of the shell will mi smaller the flange, the less strength it has to keep the shell round.

Specifying a Drawn Shell

Since the original blank is so altered by the deep draw process, the wall thickness c in terms of mill tolerances. Depending on application, the three ways of specifying t material in a shell would be to call out the thickness of material to be used, the mini or the maximum wall thickness. Wall thickness can be specified in more detail, but development work has been done with the draw process. Since the material is form punch, shells are typically dimensioned to the inside diameter, with taper allowed fr Alternatively, the shell can be dimensioned to the outside diameter with the maximu top, and tapering down to the bottom.

If a straight shell with no flange is required, the shell will be "pinch-trimmed" -- that i the outside diameter. Since the shell has a radius at the top, the remaining trimmed partial radius from the inside, abruptly ending in a somewhat sharp outer edge. Als must have enough clearance to accept the shell, there will be a slight flare at the to bottom of a shell can be pierced out in a similar manner to produce a tubular part, t trim principles apply to the inside diameter. If a straight, cut-off edge is desired, it w secondary machining or cut-off operation and should be specified on the part drawi

Flatness

Raw Material: coiled strip material by nature is not flat. As material is unwound off t some of that curve shape along its length, called coil set. In addition, the width of th a slight arc to it. This is called crossbow. Coil set can be minimized or removed by t equipment at the beginning of the metal stamping process. But crossbow is much t and generally survives to affect the flatness of the finished stamping.

Stamping Process

As described earlier, the metal stamping process places compressive forces on the the top edge is rolled into the cut, the bottom edge tends to turn slightly also. This c edges affects the flatness of the finished part, being minimal in thinner or milder ma becoming severe in heavier stock or tougher materials such as stainless steels and alloys. When flatness is critical, tooling can be designed to minimize distortion but r stations or secondary operations.

For the same reason, perforated or trimmed features that are placed too close to ea material edge tend to roll the material between, producing a distorted or thinned ed thumb in stamping design is to leave a minimum of 1-1/2 times material thickness b perforated features. Also, the stretching and compression of forming can distort hol form or bend. Holes are best kept at least 2 times material thickness beyond the ra feature. If this is not possible, the hole should be designed with sufficient clearance distortion.

Cosmetics

Tool Marks

The forces required to bend and shape metal place leave their marks on the finishe in thicker materials. A punch wiping by the material to form it will cause tool marks c the bend. Deep drawn parts will have shock lines near the bottom of the cup. Coini embossing will leave impressions in the material surrounding the form. Where the f are used to form the part, holes drilled for fasteners can leave marks on the part. Tl are a normal part of the metal forming process, however when cosmetics are impor can be minimized by the use of creative tooling techniques and careful die design.

Handling

Most metal stampings are automatically ejected from press equipment, moved thro manufacturing process in the largest containers possible, mass finished and shippe They are subject to the dings and scratches common to this type of process.

It is most helpful to know what the application is, and what the cosmetic requiremen possible, cosmetic specifications should be described on the part drawing.

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